

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

BRAUN GmbH,

Plaintiff,

v.

RAYOVAC CORPORATION,

Defendant.

Civil Action No. 03-CV-12428-WGY

REPORT OF SAMIR NAYFEH

Dated: May 23, 2005

EXHIBIT K

I. INTRODUCTION

I am an Assistant Professor of Mechanical Engineering at the Massachusetts Institute of Technology in Cambridge, Massachusetts. A copy of my curriculum vitae is attached to this Report at Exhibit A.

I was retained by Braun GmbH (“Braun”) to examine cleaning devices for electric shavers, which I understand to be sold by Rayovac Corporation (“Rayovac”), and to opine as to whether these devices infringe two patents -- U.S. Patent No. 5,711,328 (the “’328 Patent”) and U.S. Patent No. 5,649,556 (the “’556 Patent”), which I understand to be owned by Braun. I am being compensated at an hourly rate for the work that I perform in this matter. My hourly rate is \$300. This compensation is unaffected by the outcome of this matter.

In order to arrive at my opinion, I have reviewed the ’328 Patent and the ’556 Patent. I have also reviewed the patent prosecution histories for each of these patents.

In addition, I have examined three Remington products – two “Titanium Smart System” electric shaving systems: a men’s rotary system with product designation R-9500 (the “R-9500 cleaning system”) and a men’s foil system with product designation MS-5500 (the “MS-5500 cleaning system”);¹ and one “Smooth & Silky Titanium System”, which is a women’s foil system with product designation WDF-7000CS (the “WDF-7000CS cleaning system”). Each of these Rayovac products includes an electric shaver and a cleaning system.

I have also reviewed the parties’ *Markman* briefs, and accompanying exhibits, which I understand to have been submitted with the Court in this matter. Finally, I have reviewed the transcript from the March 15, 2005 *Markman* hearing.

II. OPINION SUMMARY

In my opinion, each of the three Rayovac cleaning systems, which I have examined, infringes claims 11, 12, 14, and 18 of the ’328 Patent. As discussed in more detail below, each of the claim elements of each of these claims is found in each of the three Rayovac cleaning systems.

In my opinion, each of the three Rayovac cleaning systems, which I have examined, infringes claims 1, 6, and 18 of the ’556 Patent. As discussed in more detail below, each

¹ I understand that Rayovac sells another men’s foil shaver cleaning system with product designation MS-5700. I further understand that this MS-5700 cleaning system differs from the MS-5500 cleaning system only with respect to certain details of the electric shaver, which do not affect the cleaning operation and that the MS-5700 cleaning system is identical in all material respects to the MS-5500 cleaning system. Therefore, my opinion with regard to the MS-5700 cleaning system is the same as my opinion with regard to the MS-5500 cleaning system.

of the claim elements of each of these claims is found in each of the three Rayovac cleaning systems.

III. COMPARISON OF CLAIMS AND RAYOVAC PRODUCTS

In the following charts, I compare the claims of the '328 Patent and the '556 Patent to the Rayovac cleaning systems. Each of the three Rayovac cleaning systems, which I have examined, operates in substantially the same manner. In each, an electric shaver is inserted into a housing to be cleaned, dried, charged, and stored. During the cleaning operation, cleaning fluid is fed from a container to a structure that supports or receives the shaving head of the electric shaver.

In the attached photographs of these cleaning systems, corresponding components of the R-9500, MS-5500, and WDF-7000CS cleaning systems are given the same numbers, and the descriptions and analysis in the following apply equally to each of the three systems unless noted. Figures 1a-1d are photographs of the R-9500 cleaning system and are attached to this report as Exhibit B; Figures 2a-2c are photographs of the MS-5500 cleaning system and are attached to this report as Exhibit C; Figures 3a-3c are photographs of the WDF-7000CS cleaning system and are attached to this report as Exhibit D.

THE '328 PATENT

Claim 11

Claim 11 Of The '328 Patent	The Court's Construction	The Remington Shaving System
A cleaning device comprising:		Each Rayovac cleaning system includes an electric shaver 1 and a cleaning device contained in a housing 2 and including a container 5, as shown in Figures 1a, 2a, and 3a. The electric shaver 1 is inserted into the housing 2 to be cleaned, dried, charged, and stored.
a cradle structure adapted to receive a shaving head of a shaving apparatus,	a structure adapted to support or receive a shaving head of a shaving apparatus and able	Referring to Figures 1a, 2a-c, and 3a-c, the cleaning device of each system includes manifold 3a with ports 3b and supporting structures 3c. ² When the shaving head 4 of the shaver 1 is

² Only a subset of the ports 3b and supporting surfaces 3c are labeled in each photograph. The R-9500 cleaning system has three ports 3b and several protruding supporting surfaces 3c. The MS-5500 cleaning system has four ports 3b and several supporting surfaces 3c on a spring-supported structure. The WDF-7000CS cleaning system has two ports 3b and several supporting surfaces 3c on a spring-supported structure.

Claim 11 Of The '328 Patent	The Court's Construction	The Remington Shaving System
	to receive or retain fluid or both	inserted into the cleaning system, it bears against the ports 3b and the surfaces of supporting structures 3c, and is thereby supported in place. The manifold 3a, ports 3b, and supporting structures 3c together constitute the cradle structure.
a cleaning fluid container,	a container for holding cleaning fluid	Referring to Figures 1b, 2b, and 3b, a container 5 holds cleaning fluid.
a feed device for feeding cleaning fluid to said cradle structure,	a mechanism that feeds cleaning fluid from the cleaning fluid container to the cradle structure	Referring to Figures 1c, 2c, and 3c, a pump 6 and conduit 7 feed fluid to the manifold 3a and ports 3b of the cradle structure during the cleaning operation.
said cradle structure being arranged above a fluid level of the cleaning fluid in said cleaning fluid container during the feeding of said cleaning fluid to said cradle structure, and	During the feeding of said cleaning fluid to said cradle structure, the cradle structure is above the fluid level of the fluid in the fluid container.	The cradle structure 3a, 3b, and 3c is located above the cleaning fluid level in the container 5 during the feeding of cleaning fluid to the cradle structure.
a drying device.	a drying device.	Referring to Figures 1c, 2c, and 3c, the cleaning device of each system includes a rotor 8 in an impeller casing 9 configured to blow air through an opening in the impeller casing 9 to the shaving head 4. This airflow serves to dry the shaving head 4.

Claim 12

Claim 12 of the '328 Patent adds one limitation to claim 11: that the drying device comprises an impeller.

Claim 12 Of The '328 Patent	The Court's Construction	The Remington Shaving Systems
A device as claimed in claim 11, wherein the drying device comprises an impeller.	The device comprises an impeller, which is a rotating device or member of a turbine, blower, fan, axial or centrifugal pump.	Referring to Figures 1c, 2c, and 3c, each cleaning system includes a rotor 8, which moves inside an impeller casing 9 to impart motion to air in order to dry the electric shaver. The rotor 8 is an impeller.

Claim 14

Claim 14 of the '328 Patent is identical to claim 11 except that claim 14 includes the limitation that the cradle structure 3a, 3b and 3c be permanently open to atmosphere and does not require that the cleaning system include a drying device. For each Rayovac cleaning system, the cradle structure 3a, 3b and 3c is permanently open to the atmosphere. This enables the shaver to be inserted in the cradle structure without any effort and to be removed without the need to utilize any parts closing the cradle structure. This arrangement eliminates the need to provide an elaborate seal around the cradle structure. In all other respects, claim 14 is identical to claim 11, and therefore my analysis of the remaining elements of claim 14 follows the analysis for claim 11 above.

Claim 14 Of The '328 Patent	The Court's Construction	The Remington Shaving Systems
A cleaning device comprising		Each Rayovac cleaning system includes an electric shaver 1 and a cleaning device contained in a housing 2 and including a container 5, as shown in Figures 1a, 2a, and 3a. The electric shaver 1 is inserted into the housing 2 to be cleaned, dried, charged, and stored.
a cradle structure adapted to receive a shaving head of a shaving apparatus, said cradle structure being permanently open to atmosphere,	a structure adapted to support or receive a shaving head of a shaving apparatus and able to receive or retain fluid or both, permanently open towards the open	Referring to Figures 1a, 2a-c, and 3a-c, the cleaning device of each system includes manifold 3a with ports 3b and supporting structures 3c. When the shaving head 4 of the shaver 1 is inserted into the cleaning system, it bears against the ports 3b and the surfaces of supporting structures 3c, and is thereby supported in place. The manifold 3a, ports 3b, and supporting structures 3c

Claim 14 Of The '328 Patent	The Court's Construction	The Remington Shaving Systems
	air.	<p>together constitute the cradle structure.</p> <p>The cradle structure 3a, 3b, and 3c is permanently open to the atmosphere. As a result, the shaver 1 is easily insertable in the cradle structure 3a, 3b, and 3c and removable therefrom. No elaborate seal is provided.</p>
a cleaning fluid container,	a container for holding cleaning fluid	Referring to Figures 1b, 2b, and 3b, a container 5 holds cleaning fluid.
a feed device for feeding cleaning fluid to said cradle structure,	a mechanism that feeds cleaning fluid from the cleaning fluid container to the cradle structure	Referring to Figures 1c, 2c, and 3c, a pump 6 and conduit 7 feed fluid to the manifold 3a and ports 3b of the cradle structure during the cleaning operation.
said cradle structure being arranged above a fluid level of the cleaning fluid in said cleaning fluid container during the feeding of said cleaning fluid to said cradle structure.	During the feeding of said cleaning fluid to said cradle structure, the cradle structure is above the fluid level of the fluid in the fluid container.	The cradle structure 3a, 3b, and 3c is located above the cleaning fluid level in the container 5 during the feeding of cleaning fluid to the cradle structure.

Claim 18

Claim 18 of the '328 Patent is identical to claim 11 except that claim 18 includes the limitation that the cleaning system include a bracket for insertion of the shaver, and does not require that it include a dryer. In all other respects, claim 18 is identical to claim 11, and therefore my analysis of the remaining elements of claim 18 follows the analysis for claim 11 above.

Claim 18 Of The '328 Patent	The Court's Construction	The Remington Cleaning Systems
A cleaning device comprising		Each Rayovac cleaning system includes an electric shaver 1 and a cleaning device contained in a housing 2 and including a container 5, as shown in Figures 1a, 2a, and 3a. The electric shaver 1 is inserted into the housing 2 to be cleaned, dried, charged, and stored.

Claim 18 Of The '328 Patent	The Court's Construction	The Remington Cleaning Systems
a cradle structure adapted to receive a shaving head of a shaving apparatus,	a structure adapted to support or receive a shaving head of a shaving apparatus and able to receive or retain fluid or both	Referring to Figures 1a, 2a-c, and 3a-c, the cleaning device of each system includes manifold 3a with ports 3b and supporting structures 3c. When the shaving head 4 of the shaver 1 is inserted into the cleaning system, it bears against the ports 3b and the surfaces of supporting structures 3c, and is thereby supported in place. The manifold 3a, ports 3b, and supporting structures 3c together constitute the cradle structure.
a cleaning fluid container,	a container for holding cleaning fluid	Referring to Figures 1b, 2b, and 3b, a container 5 holds cleaning fluid.
a feed device for feeding cleaning fluid to said cradle structure,	a mechanism that feeds cleaning fluid from the cleaning fluid container to the cradle structure	Referring to Figures 1c, 2c, and 3c, a pump 6 and conduit 7 feed fluid to the manifold 3a and ports 3b of the cradle structure during the cleaning operation.
said cradle structure being arranged above a fluid level of the cleaning fluid in said cleaning fluid container during the feeding of said cleaning fluid to said cradle structure, and	During the feeding of said cleaning fluid to said cradle structure, the cradle structure is above the fluid level of the fluid in the fluid container.	The cradle structure 3a, 3b, and 3c is located above the cleaning fluid level in the container 5 during the feeding of cleaning fluid to the cradle structure.
a bracket for insertion of the shaving apparatus therein.	a bracket or projecting support	Referring to Figures 1a, 2a, and 3a, the Rayovac cleaning systems include a vertically extending structure 10 and an overhanging projection 11 into which the electric shaver 1 is inserted. Extending structure 10 together with overhanging projection 11 constitute a bracket or projecting support.

THE '556 PATENT

Claim 1

Claim 1 Of The '556 Patent	The Court's Construction	The Remington Cleaning Systems
A cleaning device for cleaning a shaving head of a dry shaving apparatus, said cleaning device comprising		Referring to Figures 1a, 2a, and 3a, the Rayovac cleaning systems include an electric shaver 1 and a cleaning device contained in a housing 2 and including container 5. The electric shaver 1 is inserted into the housing 2 to be cleaned, dried, charged, and stored.
a cradle structure adapted to receive therein the shaving head;	a structure adapted to support or receive a shaving head of a shaving apparatus and able to receive or retain fluid or both,	Referring to Figures 1a, 2a-c, and 3a-c, the cleaning device of each system includes manifold 3a with ports 3b and supporting structures 3c. When the shaving head 4 of the shaver 1 is inserted into the cleaning system, it bears against the ports 3b and the surfaces of supporting structures 3c, and is thereby supported in place. The manifold 3a, ports 3b, and supporting structures 3c together constitute the cradle structure.
a cleaning fluid container separate from the cradle structure for holding a cleaning fluid;	a separate cleaning fluid container that is a removable cartridge which holds cleaning fluid,	Referring to Figures 1b, 2b, and 3b, the container 5 holds cleaning fluid. The container 5 can be easily removed from the housing 2 and refilled with cleaning fluid when needed. The container 5 is distinct or separate from the cradle structure 3a, 3b, and 3c.
a filter; and	a filter,	Referring to Figure 1d, the cleaning system includes a filter 12 with an inlet port at its top 13 and permeable mesh walls 14.
a fluid feed mechanism which feeds the cleaning fluid after it passes through the filter to the cradle structure during cleaning,	a mechanism that feeds cleaning fluid from the cleaning fluid container to the cradle structure after it passes through the filter (from the pump to	Cleaning fluid passes through the filter 12 to enter the container 5. Referring to Figures 1c, 2c, and 3c, a pump 6 draws fluid from the container 5 after it passes through the filter 12, pumping it via the conduit 7 to the cradle structure manifold 3a and ports 3b during the cleaning operation. The pump 6 is therefore a fluid

Claim 1 Of The '556 Patent	The Court's Construction	The Remington Cleaning Systems
	the filter and then to the cradle). ³	feed mechanism that feeds the fluid after it passes through the filter 12 to the cradle structure.
said container and filter being separable from the cradle structure as a unit.	The container and filter are integrally formed or assembled as a unit, such unit being removable from the cleaning device.	Referring to Figures 1b, 2b, and 3b, the filter 12 and container 5 are assembled as a unit in that filter 12 is assembled to the container 5. When the container 5 is removed from the housing 2, both the filter 12 and container 5 are separated from the cleaning device together as a unit.

Claim 6

Claim 6 of the '556 Patent is identical to claim 1 except that it includes the further limitation that the container include ports through which cleaning fluid pass in and out of the cleaning fluid container. The Rayovac cleaning systems each includes an inlet port 14 at the top of the filter 13 and an outlet port 15.

Claim 6 Of The '556 Patent	The Court's Construction	The Remington Cleaning Systems
A cleaning device as claimed in claim 1, wherein the cleaning fluid container contains ports through which cleaning fluid passes in and out of the cleaning fluid container.	The cleaning fluid container includes inlet and outlet ports through which cleaning fluid passes into and out of the cleaning fluid container.	Referring to Figure 1d, the cleaning fluid enters the container 5 through an inlet port 13 and leaves through an outlet port 15.

Claim 18

Claim 18 of the '556 Patent is identical to claim 1 except that it includes the further limitation that the cradle structure be open to the atmosphere and supplied with cleaning fluid from cleaning fluid container by means of the fluid feed mechanism. In the Rayovac cleaning systems, the cradle structure 3a, 3b and 3c is permanently open to the atmosphere. This enables the shaver to be inserted in the cradle structure without any effort and to be removed without the need to utilize any parts closing the cradle structure. This arrangement eliminates the need to provide an elaborate seal around the cradle

³ Consistent with the claim language, I interpret this to mean that the claim requires that the fluid be fed to the cradle structure after the cleaning fluid passes through the filter. The particular order of fluid flow is not limited by the claim.

structure. The Rayovac cleaning systems each includes a pump 6 and conduits 7 and 8 feed fluid to the cradle structure 3a, 3b and 3c during the cleaning operation.

Claim 18 Of The '556 Patent	The Court's Construction	The Remington Cleaning Systems
A cleaning device as claimed in claim 1, wherein the cradle structure is open towards atmosphere and is supplied with cleaning fluid from the cleaning fluid container by means of the fluid feed mechanism.	The cradle structure is open towards the atmosphere. The cradle structure is supplied with cleaning fluid from the cleaning fluid container by the fluid feed mechanism.	Referring to Figures 1a, 2a, and 3a, the cradle structure 3a, 3b and 3c in each Rayovac cleaning system is permanently open to the atmosphere. As a result, the shaver 1 is easily insertable in the cradle structure 3a, 3b, and 3c and removable therefrom. No elaborate seal is provided. The Rayovac cleaning systems each includes a pump 6 and conduits 7 feed fluid to the cradle structure 3a, 3b and 3c during the cleaning operation.

IV. CONCLUSION

The three Rayovac cleaning systems infringe claims 11, 12, 14, and 18 of the '328 Patent and claims 1, 6, and 18 of the '556 Patent.

The opinions expressed in this report are based upon material made available to me in sufficient time for my review as of the date of this report. Should additional information be made available to me, I may supplement my opinions as expressed herein.


5/23/05

Samir Nayfeh
May 23, 2005